

Claims

1. Customer care and billing system (1), especially for communication services, comprising:

At least one database (7) for storage and retrieval of data preferably
5 formed as a server,

a plurality of clients communicating with the at least one database (7),
and/or at least one application server with accompanying clients, the server
communicating with the at least one database (7), and

an appropriate framework (10),

10 wherein relevant services corresponding to desired customer
care or billing processes are offered to the system user,

characterised in that

the system (1) comprises a distributed component architecture

including components (5) attributed in correspondence to the relevant services

15 offered, wherein the components (5) are able to communicate with each other
directly via interfaces.

2. Customer care and billing system (1) according to claim 1, characterised in
that the system (1) is divided into at least two hierarchically arranged layers with
increasing degree of abstraction wherein any lower layer isolates the above layer from
20 the lower layers so that details of implementations of the lower layers are hidden from
the layers above.

3. Customer care and billing system (1) according to claim 1 or 2, characterised
in that the system (1) is divided into at least two hierarchically arranged tiers
corresponding to technical tasks wherein the combined elements of all tiers together
25 completely fulfill the tasks from the storage to the presentation of data.

4. Customer care and billing system (1) according to one of claims 1 to 3, characterised in that the system (1) comprises a lowest base layer (40) containing fundamental system behaviour.
5. Customer care and billing system (1) according to one of claims 1 to 4, characterised in that the system (1) comprises a common layer (42) located above the base layer (40) containing abstractions of classes of the base layer (40) and classes that provide common facilities for all layers and tiers.
6. Customer care and billing system (1) according to one of claims 1 to 5, characterised in that the system (1) comprises a technical services layer (44) located above the common layer (42) providing software-related technical services.
7. Customer care and billing system (1) according to one of claims 1 to 6, characterised in that the system (1) comprises an application layer (46) located above the technical services layer (44) combining the services of the technical services layer (44) in an abstract application and allowing mechanisms for description of the elements of the domain tier (58) on a meta-level.
8. Customer care and billing system (1) according to one of claims 1 to 7, characterised in that the system (1) comprises a business layer (50) located above the application layer (46) containing the domain-specific classes for each component (5).
9. Customer care and billing system (1) according to one of claims 1 to 8, characterised in that the system (1) comprises a presentation tier (52) implementing the presentation of data and the feasibilities of application for the user of the system (1).
10. Customer care and billing system (1) according to one of claims 1 to 9, characterised in that the system (1) comprises an application tier (54) containing classes and interfaces that represent the application.

↓ improper multiple dependent claims.
see whether is a pre-answ. otherwise no need to reject.

11. Customer care and billing system (1) according to one of claims 1 to 12,
characterised in that the system (1) comprises a meta-application tier (56) containing
classes that provide facilities to an application to describe aspects of itself.
12. Customer care and billing system (1) according to one of claims 1 to 11,
5 characterised in that the system (1) comprises a domain tier (58) containing business
object classes of a specific application domain.
13. Customer care and billing system (1) according to one of claims 1 to 12,
characterised in that the system (1) comprises a persistence tier (60) representing a
reproduction of the class model of the domain tier (58) into the data model of the at
10 least one database (7) and supporting mechanisms for transaction-protected
manipulation of data in the at least one database (7).
14. Customer care and billing system (1) according to one of claims 1 to 13,
characterised in that the system (1) comprises a meta-application dictionary containing
information about one component (5), its classes and the attributes of these classes,
15 and allowing the dynamic configuration of application information and processing on
a meta-level.
15. Customer care and billing system (1) according to one of claims 1 to 14,
characterised in that the system (1) comprises facilities (68) to make the server's
interface model available on client side (70) and thus to hide the employed
20 communication technology from a client developer.
16. Customer care and billing system (1) according to one of claims 1 to 15,
characterised in that the system (1) provides defined interfaces and mechanisms for
inquiry distribution, so that multiple application server of the same kind can be added
to the system (1).

17. Customer care and billing system (1) according to one of claims 1 to 16,
characterised in that the system (1) provides the possibility of replacing or adding
components (5).

18. Customer care and billing system (1) according to one of claims 1 to 17,
5 characterised in that classes can be extended and/or new classes can be added to vary a
component during processing by using meta-application facilities.

19. Customer care and billing system (1) according to one of claims 1 to 18,
characterised in that the database (7) comprises a plurality of independent database
sections (12) and/or multiple independent databases (12) exist, wherein each of the
10 independent database sections and/or the independent databases (12) only
communicate with one component (5).

20. Customer care and billing system (1) according to one of claims 1 to 19,
characterised in that the system (1) provides mechanisms to allow transaction and
memory management distributed over components (5).

15